

CLAIMS

1. An electromagnetic clutch capable of connecting and disconnecting a driving power source and a rotary shaft, comprising:

5 a rotor arranged around the rotary shaft coaxially therewith and adapted to be rotated by the driving power source;

an electromagnetic force generator including an electromagnetic coil arranged inside the rotor, the
10 electromagnetic force generator producing an electromagnetic force when the electromagnetic coil is energized;

an armature arranged close to the rotor and capable of being attracted to the rotor by the electromagnetic force
15 to produce a transmission force transmitted from the rotor to the rotary shaft; and

a coupler coupling the armature and the rotary shaft to each other, the coupler including a connecting member coupled to the rotary shaft, and leaf springs coupling the
20 connecting member and the armature to each other and urging the armature in such a direction as to separate the armature from the rotor,

wherein the leaf springs each assume an orientation such that a boost force assisting an attractive force
25 acting on the armature is produced based on the transmission force when the armature is attracted to the rotor.

2. The electromagnetic clutch according to claim 1, wherein each of the leaf springs has inner and outer ends
30 as viewed in a radial direction of the armature, the inner end being located more forward than the outer end, as viewed in a rotating direction of the armature, and separated farther from the armature than the outer end.

3. The electromagnetic clutch according to claim 2,
wherein each of the leaf springs has an inclined portion
inclined with respect to the armature, the inclined portion
being inclined at an angle falling within a range in which
5 the armature is separable from the rotor when the
electromagnetic coil is de-energized during rotation of the
armature together with the rotor.

4. The electromagnetic clutch according to claim 3,
wherein the connecting member has mounting portions to
10 which the inner ends of the respective leaf springs are
attached, each of the mounting portions being inclined at
an angle corresponding to the angle of inclination of the
leaf springs.

5. The electromagnetic clutch according to claim 4,
15 wherein the inner ends of the leaf springs are coupled to
the respective mounting portions by caulking.

6. The electromagnetic clutch according to claim 4,
wherein the inner end of each of the leaf springs is formed
as a folded portion, the folded portion clamping the
20 corresponding mounting portion therein.

7. The electromagnetic clutch according to claim 3,
wherein the connecting member has mounting holes into which
the inner ends of the respective leaf springs are inserted.

8. The electromagnetic clutch according to any one of
25 claims 2 through 7, wherein the armature has fixing holes
into which the outer ends of the respective leaf springs
are inserted.